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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/041,780	10/24/2001	Yasuo Kitaoka	10873.826US01	3107

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EXAMINER

VY, HUNG T

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 05/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/041,780

Applicant(s)

KITAOKA ET AL.

Examiner

Hung T Vy

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.


- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on 24 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

1. In response to the amendment filed on 03/24/2003, claims 1-22 are pending in this application.

### Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 4 and 7 are rejected under 35 U. S. C. § 102 (b) as being anticipated by Yamanoto et al., U.S. patent No. 5,936,985.

Regarding claim 1, Yamanoto et al. discloses a coherent light source comprising: a source emitting light (42) having a first wavelength; and a wavelength converting device for converting (22a) the wavelength of the first light by half (See column 2, line 2-68), the wavelength converting device (22a) converting the first light into harmonic light having a second wavelength (P2) (See fig 14,15), wherein the wavelength of the first light is detected (28) and controlled to controlled to a desired wavelength, so that the wavelength of the second light is controlled (See column 9, line 44-56).

Regarding claims 2-4, Yamanoto et al. discloses the coherent light source, wherein the first light is emitted from a semiconductor laser having a wavelength

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variable function (See column 3, line 25-34), the semiconductor laser comprises an active region (44), a phase control region (41) and a distributed Bragg reflection (DBR) region (40). (See column 9, line 12-22) and the desired wavelength is within a phase-matching wavelength tolerance of the wavelength converting device (See column 5, line 20-34), and a variation in wavelength of the first light with a change in operating current thereof is compensated by changing current to be input to the phase control region or the DBR region (See column 5, line 47-63).

Regarding claim 7, Yamamoto et al. disclose the coherent light source, wherein a means for separating (Splitter 27) the fundamental light and the harmonic light (See fig 1).

### **Claim Rejections - 35 U.S.C. § 103**

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-6, and 8-22 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Yamamoto et al., U.S. patent No. 5,936,985 in view of Kitaoka et al., U.S. Patent No. 5,960,259.

Regarding claim 5, Yamamoto et al. discloses a coherent light source comprising: a source emitting light (42) having a first wavelength; and a wavelength converting

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device for converting (22a) the wavelength of the first light by half (See column 2, line 2-68), the wavelength converting device (22a) converting the first light into harmonic light having a second wavelength (P2) (See fig 14,15), wherein the wavelength of the first light is detected (28) and controlled to controlled to a desired wavelength, so that the wavelength of the second light is controlled (See column 9, line 44-56), but Yamamoto et al. does not disclose a first mechanism that detects the wavelength of the first light. However, Yitaoka et al. discloses a first mechanism (105) that detects the wavelength of the first light (See fig 22)

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to modify having a mechanism that detects the wavelength of the first light because those skilled in the art will recognize that such modification and variations can be made without departing from the spirit of the invention. It would have been obvious to provide Yamamoto et al. with the limitations as taught or suggested by Yitaoka et al.

Regarding claims 6, and 17, Kitaoka et al. disclose the coherent light source, wherein the wavelength of the fundamental light that has passed through the wavelength converting device is detected so as to be controlled to the desired wavelength (See column 7, line 23-39).

Regarding claim 18, Yamamoto et al. disclose the coherent light source, wherein a means for separating (Splitter 27) the fundamental light and the harmonic light (See fig 1).

Regarding claims 8,10 and 19, Kitaoka et al. discloses the coherent light source, further comprising: a diffraction grating (in wavemeter 105); and Yamamoto et al. discloses a photo-detector (28) (See fig 1).

Regarding claims 9,11-12, Yamamoto et al. disclose the wavelength-converting (22a) device has an optical waveguide (2), and the diffraction grating is formed on the optical waveguide (See fig 1), the photo-detector (28) is provide on one side of a substrate (1) on which the optical waveguide (2) is formed (see fig 1).

Regarding claims 13,15-16 and 20-22, Yamamoto et al. discloses the claimed invention except for a cesium (Cs) gas cell. It would have been obvious to one having ordinary skill in the art at the time the invention was made to a cesium (Cs) gas cell, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 14, Kitaoka et al. disclose the coherent light source, wherein the phase-matching wavelength of the wavelength converting device is varied by changing a refractive index of the wavelength converting device With electrooptic effect or temperature change (See column 4, line 1-8).

### **Citation of Pertinent References**

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The patent to Bates discloses Optical coherence and Wavelength Measurement, U.S. Patent No. 3,927,945.

### **Response to Arguments**

5. Applicant's arguments with respect to claims 1-22 have been considered but are moot in view of the new ground(s) of rejection. Respect on argument of applicant filed on 03/24/2003 has been fully considered, but they are not persuasive. The applicant argues the wavelength of the first light is being monitored by the coherent light source so that when a desired wavelength is detected; the wavelength of the second light generated by the wavelength-converting device is controlled at a desired level.

Yamamoto et al. teaches the wavelength of the first light is being monitored by the coherent light source (27,28) so that when a desired wavelength is detected (28) ; the wavelength of the second light generated by the wavelength-converting device is controlled at a desired level as fig 1 or rejection above, further the application does not recite any controller device to control the wavelength.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung VY whose telephone number is (703) 605-0759. The examiner can normally be reached on Monday-Friday 8:30 am - 5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul IP can be reached on (703) 308-3098. The fax numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.



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